

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jeffrey Howell on 3/24/2010.

The application has been amended as follows:

The first line of paragraph [0008] has been changed from "In according with a second aspect" to --In accordance with a second aspect—

Paragraph [0025], line 1, "The storing means previously stores data" has been changed to --The storing means has previously stored data—

Paragraph [0026], line 4, "The cooling characteristic is optionally settable with a wide range such as the one" has been changed to --The cooling characteristic is optionally settable with a wide range such as one—

Paragraph [0034], "The target physical amount reduction degree corresponding to a current physical amount is retrieved and provided to the reference table at every sampling time" has been changed to --The target physical amount reduction degree corresponding to a current physical amount is retrieved from the reference table at every sampling time.--

Paragraph [0039], "For example, in the case" has been changed to --In the case—

Paragraph [0047], "A block diagram of control mechanism" has been changed to
--A block diagram of the control mechanism--

Paragraph [0048] has been deleted; also, the heading "EXPLANATION OF
REFERENCE SYMBOLS" has been deleted

Paragraph [0053], line 7, "unit mount 38 is mounted" has been changed to --unit
mount 38 (see figure 4) is mounted--

Paragraph [0063], "the heat exchange position is located as much as possible to
near the outlet side" has been changed to --the heat exchange position is located as
near as possible to the outlet side--

Paragraph [0069], "Regarding the standardization of the capillary tube 18" has
been changed to --Regarding the standardization of the capillary tube 35--

Paragraph [0079], "which stores a linear line 'a' of a linear function" has been
changed to --which stores a linear line 'xp' of a linear function;

Paragraph [0079], "When the ideal curve is a linear line 'a'," has been changed to
--When the ideal curve is a linear line 'xp',--

Paragraph [0079], "is a predetermined value 'A'" has been changed to --is a
predetermined valued 'Ap'--

Paragraph [0082] has been replaced with

--As shown in Fig. 8, an actual internal temperature drop degree $Sp(Sc)$ is
obtained at every detection cycle. The obtained value $Sp(Sc)$ is compared with a target
value $Ap(Ac)$ read from data storage 49. When the obtained value $Sp(Sc)$ is equal to or
below the target value $Ap(Ac)$, the rotational speed of the inverter compressor 32 is

increased via the inverter circuit 50. On the other hand, when the obtained value $Sp(Sc)$ is larger than the target value $Ap(Ac)$, the rotational speed of the compressor 32 is reduced. This is repeated at predetermined time intervals so that pull down cooling is carried out along an ideal curve (linear line x_p).—

Paragraph [0085], “As a result, the internal temperature may remain at a value slightly lower than a set temperature, even though the inverter compressor is operating at a low-speed, or the ON time may be made excessively long when the temperature drop results in only a slight change” has been changed to --As a result, the internal temperature may remain at a value slightly lower than a set temperature, because the inverter compressor 32 is operating at a low speed, with excessively long On time when the temperature drop results in only a slight change.--

Paragraph [0086], “frost continuously falls on the evaporator 36” has been changed to --frost continuously falls on the evaporator 36—

Paragraph [0096], “Thereafter, when set internal temperatures have been respectively supplied to the refrigerating and freezing compartments 15 and 16.” Has been changed to --Thereafter, set internal temperatures are respectively supplied to the refrigerating compartments 15 and 16.—

Paragraph [0156], “the inverter compressor is forced to be turned off when a timer measures” has been changed to --the inverter compressor is turned off when a timer measures—

Immediately preceding paragraphs [0025], [0027], [0029], [0030], [0031], [0032], [0033], [0034], [0035], [0037], [0039], [0041], [0042], [0044], and [0046], the headings "<The invention of aspect 1>" through "<The invention of aspect 16>" are deleted.

Claim 37 has been replaced with:

-- A refrigerating storage cabinet comprising:

a refrigeration unit for refrigerating an inner atmosphere, the refrigeration unit having a speed-controllable inverter compressor and an evaporator, the compressor having a plurality of performance levels;

a temperature sensor configured to detect a current temperature of the inner atmosphere at predetermined intervals of operating time; and

an operation control unit configured to control the inverter compressor by selecting one of the plurality of performance levels based on the current temperature, the operation control unit including:

a temperature change computing section configured to compute a current temperature reduction degree at the predetermined intervals of operating time, based on the current temperature and a previously detected temperature;

a target temperature reduction degree output section configured to obtain a target temperature reduction degree associated with the current temperature;

a comparing section configured to compare the current temperature reduction degree to the target reduction degree; and

a compressor control section configured to select one of the plurality of performance levels based on a result of the comparison made by the comparing section,

the operation control unit being configured to control the inverter compressor so that a rotational speed of the inverter compressor is increased when the comparing section indicates that the current temperature reduction degree is smaller than the target temperature reduction degree and the rotational speed of the inverter compressor is decreased when the comparing section indicates that the current temperature reduction degree is larger than the target temperature reduction degree,

the refrigerating storage cabinet further comprising a storing unit configured to store a reference table having a plurality of target temperature reduction degrees associated with a plurality of temperatures individually representing a temperature of the inner atmosphere, wherein

the plurality of target temperature reduction degrees is predetermined according to an ideal cooling characteristic that indicates a target temperature as a function of operating time, the target temperature decreasing gradually with a lapse of operating time according to the ideal cooling characteristic; and

the target temperature reduction degree output section obtains the target temperature reduction degree by retrieving a target temperature reduction degree associated with the current from the reference table, and

the ideal cooling characteristic includes a pull down characteristic for a temperature range from above a predetermined high temperature to near a set temperature; and

the predetermined high temperature is set to be higher than the set temperature by a value larger than a predetermined value; and

the pull down characteristic includes a first pull down zone and a second pull down zone;

the pull down characteristic includes a pull down characteristic that is provided for the first pull down zone and is a linear function; and

the pull down characteristic includes a pull down characteristic that is provided for the second pull down zone and is a quadratic function. --

Claims 38-40 and 48 have been cancelled.

Claims 41, 42, 43, 44, and 50, "according to claim 40" has been changed to – according to claim 37—

Claim 49, "according to claim 39" has been changed to –according to claim 37—

2. The following is an examiner's statement of reasons for allowance: the limitation of two pull down characteristic zones, with one further out from the target having a target cooling characteristic which is linear and the one closer to the set temperature being quadratic, is not obvious in view of the art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smith (US Patent Application Publication No. 2009/0216379), Duncan (US Patent Application Publication No. 2009/0171512), Song et al (US Patent Application Publication No. 2008/0295531), and Moens (US Patent No. 7,442,012) all disclose relevant control methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXIS K. COX whose telephone number is (571)270-5530. The examiner can normally be reached on Monday through Thursday 9:00a.m. to 6:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules or Cheryl Tyler can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AKC/

/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744